



Dart Aerospace Ltd.
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Matte Black

D117-762-041
Job Sheet 189239



Part No: D117-762-041

Job Qty: 1 ea

Part Name: Replacement Skidtube



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 1/22/19

Job Tracking No:

Due Date: 2/1/19

Created By: Jesse White

Type: SOLD

Description:

Note: DWG D3582 REV E IPP Rev:A 07.06.11 New Issue EC IPP Rev:B 08-02-22 change to revA as per dwg DD verF by:EC IPP REV:C 15.06.11 AS PER CHG002 DD VERF:JLM IPP REV:D 16.02.05 DWG REV.C (ecn16-514) DD VERF:JLM IPP REV:E 17.01.17 as per dwg REV.D DD VERF:JLM

Ship Via:



Dart Aerospace Ltd.
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Hawkesbury, ON K6A 1K7
CANADA
TEL.: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

Container No: S147449



Part: D117-762-041

Job No: 189239

Serial No/Batch: S147449

Revision:

Inspector:

Exp Date:

Instructions: FAA STC SR01853SE 15/10/2019 TC STC LoA RI

Entered: _____ Date: _____



WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
Date :	Sequence #:	QTY Affected :		MRB (QSI042)	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor	
				QC / QA Coordinator	
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Preservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐		FAULT CATEGORY ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread			
Other/Details: _____					

Job Routing

Op N ^o	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	1 Ea		2/1/19	0.00	0.00	Start Up Skid tubes-1		BB
130	Skid tubes	1 pcs		2/1/19	0.00	3.47	Skid tubes-1		BE
140	Skid tubes	1 pcs		2/1/19	0.00	3.47	Skid tubes-1		PD 19-02-05
150	QC	1 pcs		2/1/19	0.00	0.00	QC10		PD 19-02-05
160	QC	1 pcs		2/1/19	0.00	0.00	QC5		21 19-02-05
170	HandFinish	1 pcs		2/1/19	0.00	0.97	HandFinish1		DR 19-02-06
180	QC	1 pcs		2/1/19	0.00	0.00	QC7-1		BE 19-02-06
190	Skid tubes	1 pcs		2/1/19	0.00	3.47	Skid tubes-1		21 19-02-06
200	QC	1 pcs		2/1/19	0.00	0.00	QC10		21 19-02-06
210	QC	1 pcs		2/1/19	0.00	0.00	QC5		21 19-02-06
215	HandFinish	1 pcs		2/1/19	0.00	0.97	HandFinish2		21 19-02-06
220	Powdercoat	1 pcs		2/1/19	0.00	0.26	Powdercoat1		21 19-02-06
230	QC	1 pcs		2/1/19	0.00	0.00	QC3		21 19-02-06
250	HandFinish	1 pcs		2/1/19	0.00	0.97	HandFinish4		21 19-02-06
260	QC	1 pcs		2/1/19	0.00	0.00	QC5		21 19-02-06
270	Packaging	1 pcs		2/1/19	0.00	0.00	Packaging3-1		21 19-02-06
275	DC	1 pcs		2/1/19	0.00	0.00	DC		21 19-02-06
280	QC21-FG	1 Ea		2/1/19	0.00	0.00	QC21		21 19-02-06

Part Op 130 - 1-Cut Aft end using DT8185 2-Deburr ends 3-Drill Aft Cap holes using DT8678 *** OPEN AFT CAP HOLE TO .187" Descriptions: *** 4-Locate DT 8973 from aft cap holes & Drill Ground wire hole on top of Tube. 5-Install 3/16 cleco in Ground wire hole

, then drill all X-Bolt holes using 3/16" drill. 6-Drill pilot holes for wearplates using DT8900 7-Open wearplate holes to Ø19/64" (0.297") as per Dwg D3582. 8-Drill holes for D5520-1 doubler using DT10309 A & B, locating from 4th and 5th crossbolt holes from aft using .1875 clekos. Spot drill tube using #20 drill (note 10). Remove DT10309 B. Re-install DT 10309 A drill thru tube and doubler using #20 drill (note 10), cleko as you go. Remove .1875 clekos and open holes in tube and doubler to 0.750". Remove doublers and identify orientation. 9-Deburr doubler and doubler holes in skid tube. 10-Countersink doubler holes in skid tube as per Dwg. detail J and note 12 -Touch up alodine on D5520-1 doublers. 11- open ground wear holes to 0.391" as per section B-B 12-Open Aft Cap holes using .209" drill. 13-Drill pilot holes for section D-D and E-E. Holes must be laid out by hand. Mark out Center line and make sure that 6.65 and 5.906 measurements are respected. Double check before drilling, do not open holes to finish size. 12-Do not open holes of section G-G to finishes size.

140 - 1-Weld fwd cap D2964 per dwg D3582 and QSI 004 A/R AL ROD Batch: 136158 / 138989 2-Grind flush

190 - ***MASK OFF HOLES OF SECTION F-F (DO NOT C'SINK) 1-Open X-Bolt holes to finish size as per Dwg D3582, sections D-D, E-E, G-G as per Dwg. 2-Counter Sink X-BOLT holes as per Dwg D3582 D-D, E-E and G-G.***Do NOT countersink holes of section F-F). 3-Deburr and blow out chips from inside of tube, prep. tube for welding. 4-Install doublers using DT10309 B. Shave rivets as required. 5-Bond web as per Dwg D3582 & QSI 015 A/R 241 Sika Flex Batch: 1138944 Exp Date: 04-07-2019 6- Swage x-bolt spacer as per dwg and Section F-F QSI002. 7-Weld x-bolt spacers as per Dwg D3582 section D-D, E-E and G-G. A/R AL ROD Batch: 1138944 8-Grind welds flush

215 - Touch-up alodine as per QSI

220 - START TIME 1:50 OVEN TEMPERATURE: 320° FINISH TIME: 2:20

250 - 1-Inspect for Foreign objects 2-Install Aft cap as per Dwg D3582, Detail "C" A/R 241 Sika Flex Batch: 1138944 Exp Date: 19-02 3-Install Wearplates as per Dwg D3582, Note: Install Bolt and washer on Ground Wire inserts on top of tube see section D-D of dwg D3582 *****Do not install bolts where indicated on Dwg(Note #6)***** 4- Wing Walk as per Dwg D3582 and QSI 005 4.4

270 - Identify and pack for shipping as per PPP D117-762-041 Location :FG081

275 - Photocopy bluefile & type labels per PPP D117-762-041 CHG003

Entered: _____ Date: _____



WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

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Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
Date :	Sequence #:	QTY Affected :		MRB (QSI042)	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor	
				QC / QA Coordinator	
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Preservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐		FAULT CATEGORY ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread			
Other/Details:					

Job BOM					007976
Part / Item	Component Name	Quantity	Operation	Container	
D3582-1-BENT	Skidtube Assembly BK117	1 pcs (1 ea)	90-Start up Operation		5144991
D5520-1	Doubler	2 Ea (2 ea)	130-Skidtubes		5146905
D2964	Cap	1 pcs (1 ea)	140-Skidtubes		5146305
CR3212-5-05	Rivet	68 pcs (68 ea)	190-Skidtubes		5146305
D2971	Cross Bolt Spacer	1 pcs (1 ea)	190-Skidtubes		5090635
D3584-1	Web	1 pcs (1 ea)	190-Skidtubes		5106746
D3662-1	Crossbolt Spacer	3 pcs (3 ea)	190-Skidtubes		5148281
D3662-3	Crossbolt Spacer	1 pcs (1 ea)	190-Skidtubes		F 81606
D5304-1	Crossbolt Spacer	2 pcs (2 ea)	190-Skidtubes		5093587
ALS4-1032-130	Rivnut	36 Ea (36 ea)	250-HandFinish		5007275
ALS4-428-165	Insert	2 Ea (2 ea)	250-HandFinish		5058145
AN3-5A	Bolt	2 Ea (2 ea)	250-HandFinish		5095480
AN3C4A	Bolt	28 Ea (28 ea)	250-HandFinish		5115067
AN4-4A	Bolt	2 Ea (2 ea)	250-HandFinish		5104458
D2965	Cap	1 pcs (1 ea)	250-HandFinish		5145731
D3508-11	Wearplate Aft Center	1 pcs (1 ea)	250-HandFinish		5119729
D3508-13	Wearplate Aft	1 Ea (1 ea)	250-HandFinish		5139664
D3508-3	Wearplate Fwd Center	1 pcs (1 ea)	250-HandFinish		5119724
D3508-9	Wearplate Fwd	1 pcs (1 ea)	250-HandFinish		5119741
D3558-11	Gasket Aft Center	1 pcs (1 ea)	250-HandFinish		5146255
D3558-13	Gasket Aft	1 pcs (1 ea)	250-HandFinish		5122527
D3558-3	Gasket Center Fwd	1 pcs (1 ea)	250-HandFinish		5077347
D3558-9	Gasket Fwd	1 pcs (1 ea)	250-HandFinish		5088626
NAS1149C0332R	Washer	28 Ea (28 ea)	250-HandFinish		5124666
NAS1149D0332J	Washer	2 Ea (2 ea)	250-HandFinish		5166407
NAS1149D0416J	Washer	2 Ea (2 ea)	250-HandFinish		F 1131511

Job Allocations				
Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	D3582-1-BENT	1	8	0
130-Skidtubes	D5520-1	2	2	0
140-Skidtubes	D2964	1	20	0
190-Skidtubes	CR3212-5-05	68	183	0
	D2971	1	31	0
	D3584-1	1	12	0
	D3662-1	3	9	0
	D3662-3	1	24	0
	D5304-1	2	17	0
250-HandFinish	ALS4-1032-130	36	10,096	0
	ALS4-428-165	2	31	0
	AN3-5A	2	140	0
	AN3C4A	28	1,945	0
	AN4-4A	2	20	0
	D2965	1	41	0
	D3508-11	1	15	0
	D3508-13	1	9	0
	D3508-3	1	9	0
	D3508-9	1	15	0
	D3558-11	1	12	0
	D3558-13	1	14	0
	D3558-3	1	11	0
	D3558-9	1	11	0
	NAS1149C0332R	28	3,449	0
	NAS1149D0332J	2	2,792	0
	NAS1149D0416J	2	2,215	0

Part Specifications

Specifications could not be found.

Entered: _____ Date: _____



WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier Quality ☐			
Date :	Sequence #:	QTY Affected :		MRB (QSI042)	
Description Work Order Deviation			Disposition		
			Completed By		
			Lead hand / Supervisor		
			QC / QA Coordinator		
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Preservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐		FAULT CATEGORY ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread			
Other/Details:					

ITEM	Qty -041	Part Number	Description
	X	D3582-041	SKIDTUBE ASSEMBLY
1	1	D2962-150	EXTRUSION
2	1	D2964	CAP
3	1	D2965	CAP
4	1	D2971	CROSS BOLT SPACER
5	1	D3508-3	WEARPLATE
6	1	D3508-9	WEARPLATE
7	1	D3508-11	WEARPLATE
8	1	D3508-13	WEARPLATE
9	1	D3558-3	GASKET
10	1	D3558-9	GASKET
11	1	D3558-11	GASKET
12	1	D3558-13	GASKET
13	1	D3584-1	WEB
14	3	D3862-1	CROSS BOLT SPACER
15	1	D3862-3	CROSS BOLT SPACER
16	2	D5304-1	CROSS BOLT SPACER
17	2	D5520-1	DOUBLER
18	28	AN3C4A	BOLT
19	2	AN3-5A	BOLT
20	2	AN4-4A	BOLT
21	28	NAS1149C0332R	WASHER (AN960C10L)
22	2	NAS1149D0332J	WASHER (AN960JD10L)
23	2	NAS1149D0416J	WASHER (AN960JD416L)
24	36	AELS-1032-130	INSERT
25	2	ALS7-428-165	INSERT
26	68	CR3212-5-05	CSK RIVET, CHERRY MAX

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: CHEMICAL CONVERSION COAT PER QSI 005 4.1 PRIOR TO INSERTING D3584-1 WEB. POWDER COAT ASSEMBLY GLOSS WHITE (REF 4.3.5.1) PER DART QSI 005 4.3. ANTI-SKID PAINT AS INDICATED TO 1.00 ABOVE CENTER LINE PER DART QSI 005 4.4
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 18.2 lbs
- 8) WELDING: PER DART QSI 004.
- 9) INSERT D3584-1 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241/-291 ADHESIVE PER DART QSI 015 AFTER BENDING.
- 10) USE DART DRILL TEMPLATE DT8900 TO LOCATE AND DRILL Ø0.297 HOLES (36 PLACES) FOR WEARSHOE INSERTS. INSTALL AELS-1032-130 PER SECTION G-G (36 PLACES) AFTER FINISH. SEAL WEARPLATE BOLTS WITH SIKAFLEX-241/-291.
- 11) DO NOT INSTALL AN3C4A BOLTS AND NAS1149C0332R WASHERS IN INDICATED LOCATIONS
- 12) LOCATE QTY (34) HOLES ONTO THE SKIDTUBE PER D5520-1 DOUBLER AND DRILL Ø0.161 THRU SKIDTUBE AND DOUBLER USING DT10309. COUNTERSINK Ø0.286 x 100" (34 PL) PER DOUBLER AND INSTALL EACH D5520-1 DOUBLER USING QTY (34) CR3212-5-05 CSK RIVETS.

RELEASED
2017-08-11
KEN 17-547

E	MOVE VIEWS FROM SHT 1 TO SHT 2. ADD ITEMS 17 & 26 AND NOTE 12-13. Ø0.187 HOLE WAS Ø0.75. ADD SHT 3, ADD DETAIL J. SECTION F-F ADD D5520-1. SCALE ON VIEWS WAS 3X.	AJS	17.03.27
D	D5304-1 WAS D2973; REVISE BOM & SECTION F-F & SECTION NOTES (ZN B7-3, A8-3); REF NCR16-6160	RF	17.01.09
C	D3492 PLUG ASSEMBLIES REMOVED. REFORMAT NOTES SHT 1	AP	15.11.02
B	29.86 WAS 29.87 (ZN C2-1), INCORPORATED DEO D3582-A-1 (ZN D5-1), FORMAT TO CURRENT STD	RF	15.02.20
A	NEW ISSUE	PH	07.06.08
REV.	DESCRIPTION	BY	DATE
DESIGN	PH	DART AEROSPACE USA, INC	
DRAWN	AJS	EUGENE, OR	
CHECKED	M/K	DRAWING NO.	REV. E
MFG. APPR.	DP	D3582	SHEET 1 OF 4
APPROVED		TITLE	SCALE
DE APPR.		BK 117 SKIDTUBE ASSEMBLY	NTS
DATE	17.03.27	COPYRIGHT © 2007 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

Entered: _____ Date: _____

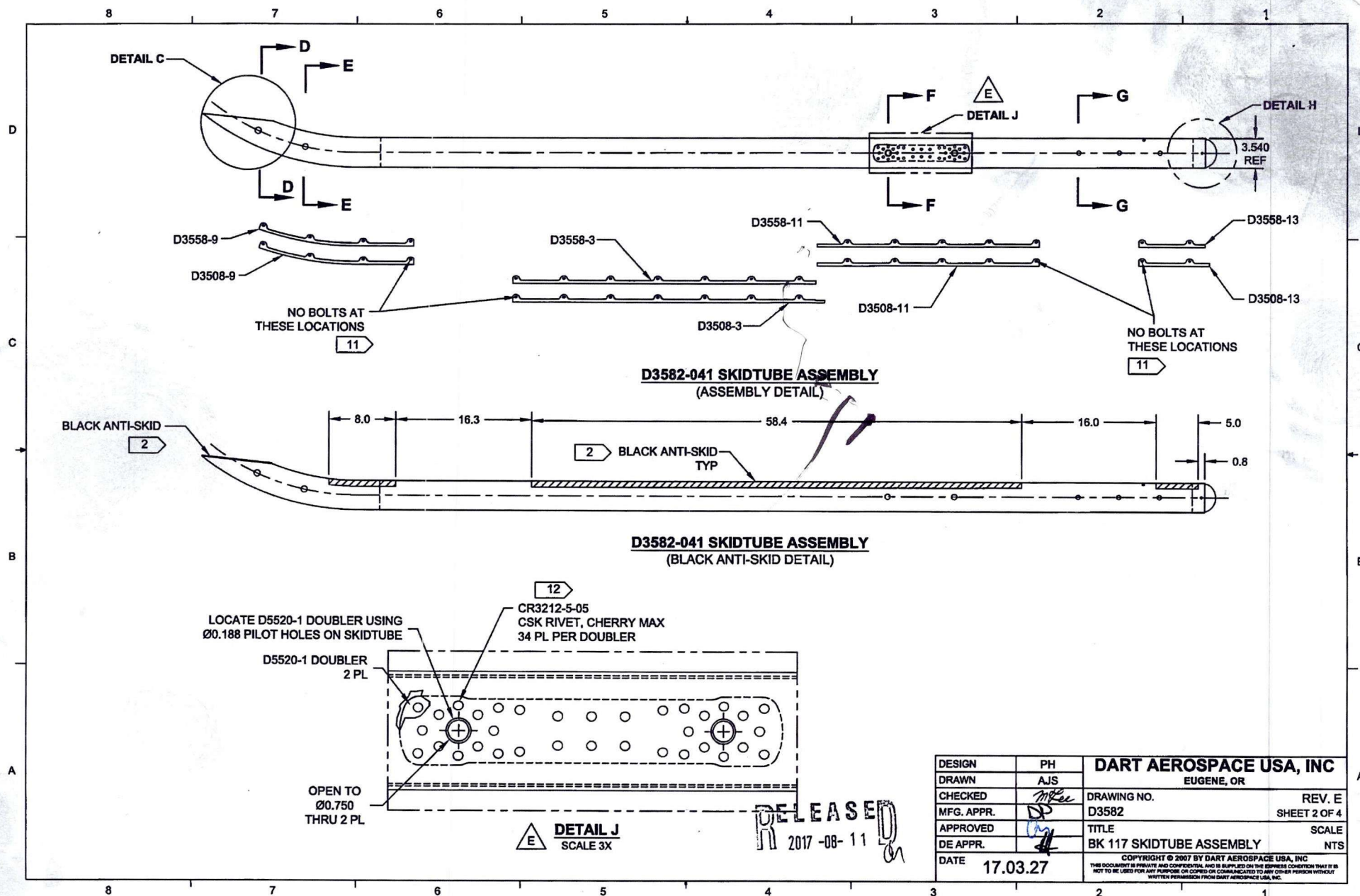


WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

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Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
Date :	Sequence #:	QTY Affected :		MRB (QS1042)	
Description Work Order Deviation			Disposition		
			Completed By		
			Lead hand / Supervisor		
			QC / QA Coordinator		
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Preservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐		FAULT CATEGORY ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread			
Other/Details:					



DESIGN	PH	DART AEROSPACE USA, INC	
DRAWN	AJS	EUGENE, OR	
CHECKED	<i>MB</i>	DRAWING NO.	REV. E
MFG. APPR.	<i>DP</i>	D3582	SHEET 2 OF 4
APPROVED	<i>DP</i>	TITLE	SCALE
DE APPR.	<i>DP</i>	BK 117 SKIDTUBE ASSEMBLY	NTS
DATE	17.03.27	COPYRIGHT © 2007 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

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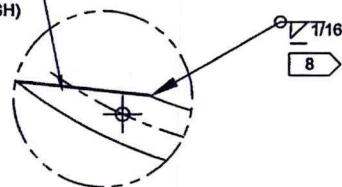
WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

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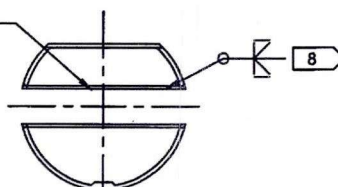
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Date :	Sequence #:	QTY Affected :		MRB (QS1042)	
Description Work Order Deviation		Disposition		Completed By	
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				QC / QA Coordinator	
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Presservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐ ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled		FAULT CATEGORY ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread			
Other/Details:					

D2964 CAP
(GRIND FLUSH)



DETAIL C
SCALE 4X

D2971 SPACER



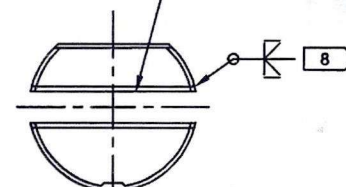
SECTION D-D
SCALE 4X

SECTION D-D NOTES

AFTER BENDING AND DRILLING ASSEMBLY
PERFORM THE FOLLOWING:

1. CHAMFER HOLE 0.030 x 45°
2. INSERT D2971 SPACER
3. WELD INTO PLACE AND GRIND FLUSH
4. PASS Ø0.750 DRILL TO REMOVE SPILL OVER

D3662-3 SPACER



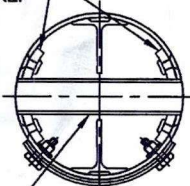
SECTION E-E
SCALE 4X

SECTION E-E NOTES

AFTER BENDING AND DRILLING ASSEMBLY
PERFORM THE FOLLOWING:

1. CHAMFER HOLE 0.030 x 45°
2. INSERT D3662-3 SPACER
3. WELD INTO PLACE AND GRIND FLUSH
4. PASS Ø0.672 DRILL TO REMOVE SPILL OVER

D5520-1 DOUBLER
REF



D5304-1 SPACER
2 PL

SECTION F-F
SCALE 4X
2 PL

SECTION F-F NOTES

AFTER BENDING AND DRILLING ASSY
PERFORM THE FOLLOWING:

1. INSERT D5304-1 SPACER
2. SWAGE TO Ø0.565 +0.005/-0.000 X 1.0
DEEP PER QSI 002
3. OPEN THRU HOLE TO Ø0.625
4. GRIND FLUSH

D3584-1 WEB
REF

D3662-1 SPACER
3 PL

10 AFTER FINISH, INSTALL
AELS-1032-130
INSERT 36 PL

AN3C4A BOLT (1)
NAS1149C0332R WASHER (1)
28 PL

10

SECTION G-G
SCALE 4X

SECTION G-G NOTES

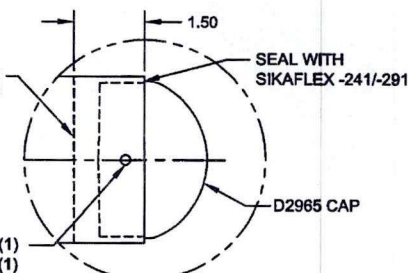
AFTER BENDING AND DRILLING ASSEMBLY
PERFORM THE FOLLOWING:

1. CHAMFER HOLE 0.030 x 45°
2. INSERT D3662-1 SPACER (3 PLACES)
3. WELD INTO PLACE AND GRIND FLUSH
4. PASS Ø0.515 DRILL TO REMOVE SPILL OVER

AFTER FINISH, INSTALL
ALS7-428-165 INSERT (1)
AN4-4A BOLT (1)
NAS1149D0416J WASHER (1)
2 PL

D3584-1 WEB
REF

AN3-5A BOLT (1)
NAS1149D0332J WASHER (1)
2 PL



DETAIL H
SCALE 4X

SEAL WITH
SIKAFLEX -241/-291

D2965 CAP

DESIGN	PH	DART AEROSPACE USA, INC	
DRAWN	AJS	EUGENE, OR	
CHECKED	<i>Miles</i>	DRAWING NO.	REV. E
MFG. APPR.	<i>DS</i>	D3582	SHEET 3 OF 4
APPROVED	<i>DS</i>	TITLE	SCALE
DE APPR.	<i>DS</i>	BK 117 SKIDTUBE ASSEMBLY	NTS
DATE	17.03.27	COPYRIGHT © 2007 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

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2017-08-11

Entered: _____ Date: _____

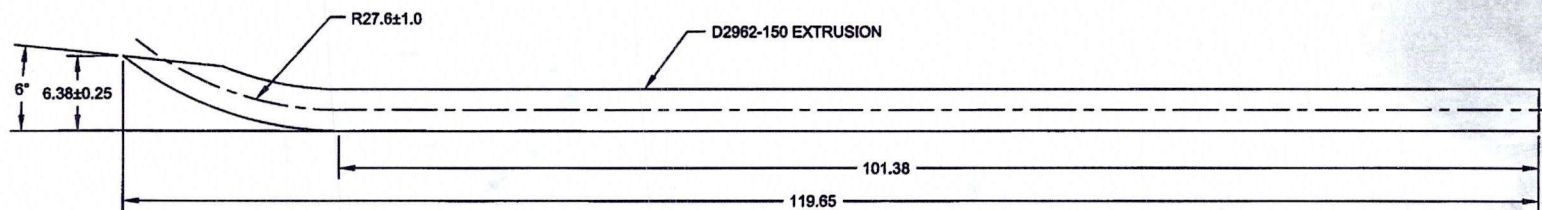


WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

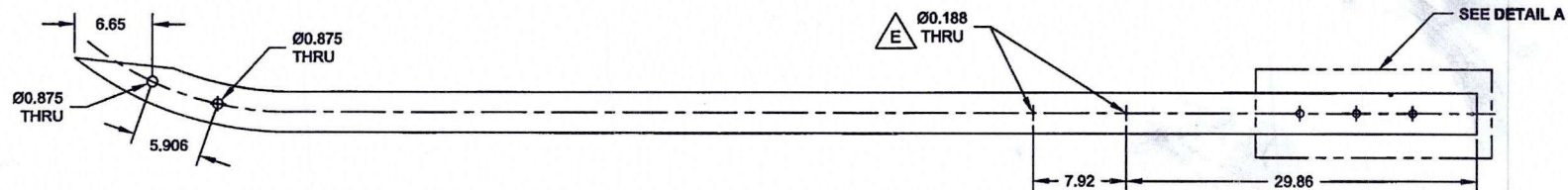
NCR No. _____

Route update only ☐

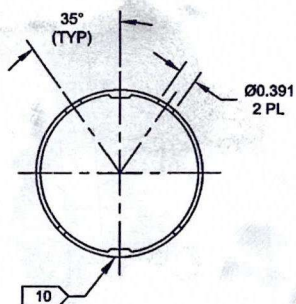
Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
Date : _____	Sequence #: _____	QTY Affected : _____		MRB (QSI042)	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor	
				QC / QA Coordinator	
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Preservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐		FAULT CATEGORY ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread			
Other/Details:					



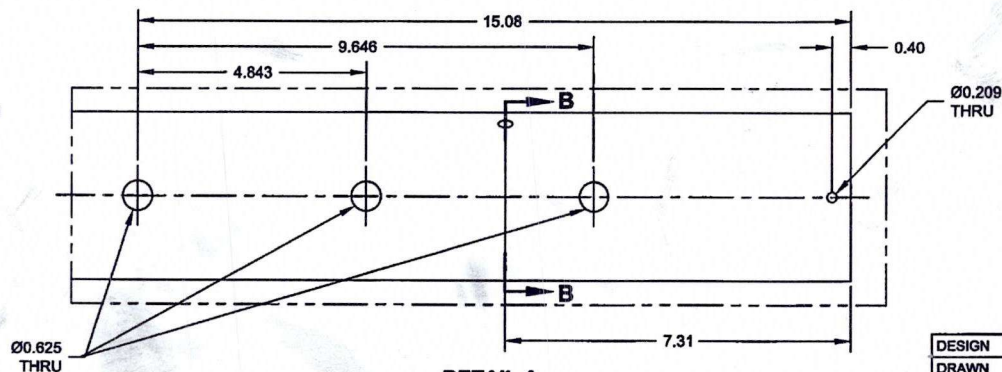
D3582-1 BENDING AND CUTTING DETAIL



D3582-1 DRILLING DETAIL



SECTION B-B
SCALE 5X



DETAIL A
SCALE 5X

RELEASED
2017-08-11

DESIGN	PH	DART AEROSPACE USA, INC	
DRAWN	AJS	EUGENE, OR	
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. E
MFG. APPR.	<i>[Signature]</i>	D3582	SHEET 4 OF 4
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	BK 117 SKIDTUBE ASSEMBLY	NTS
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Entered: _____ Date: _____



WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
Date : _____	Sequence #: _____	QTY Affected: _____		MRB (QSI042)	
Description Work Order Deviation		Disposition		Completed By	
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Preservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐ ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread		FAULT CATEGORY ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread			
Other/Details: _____					